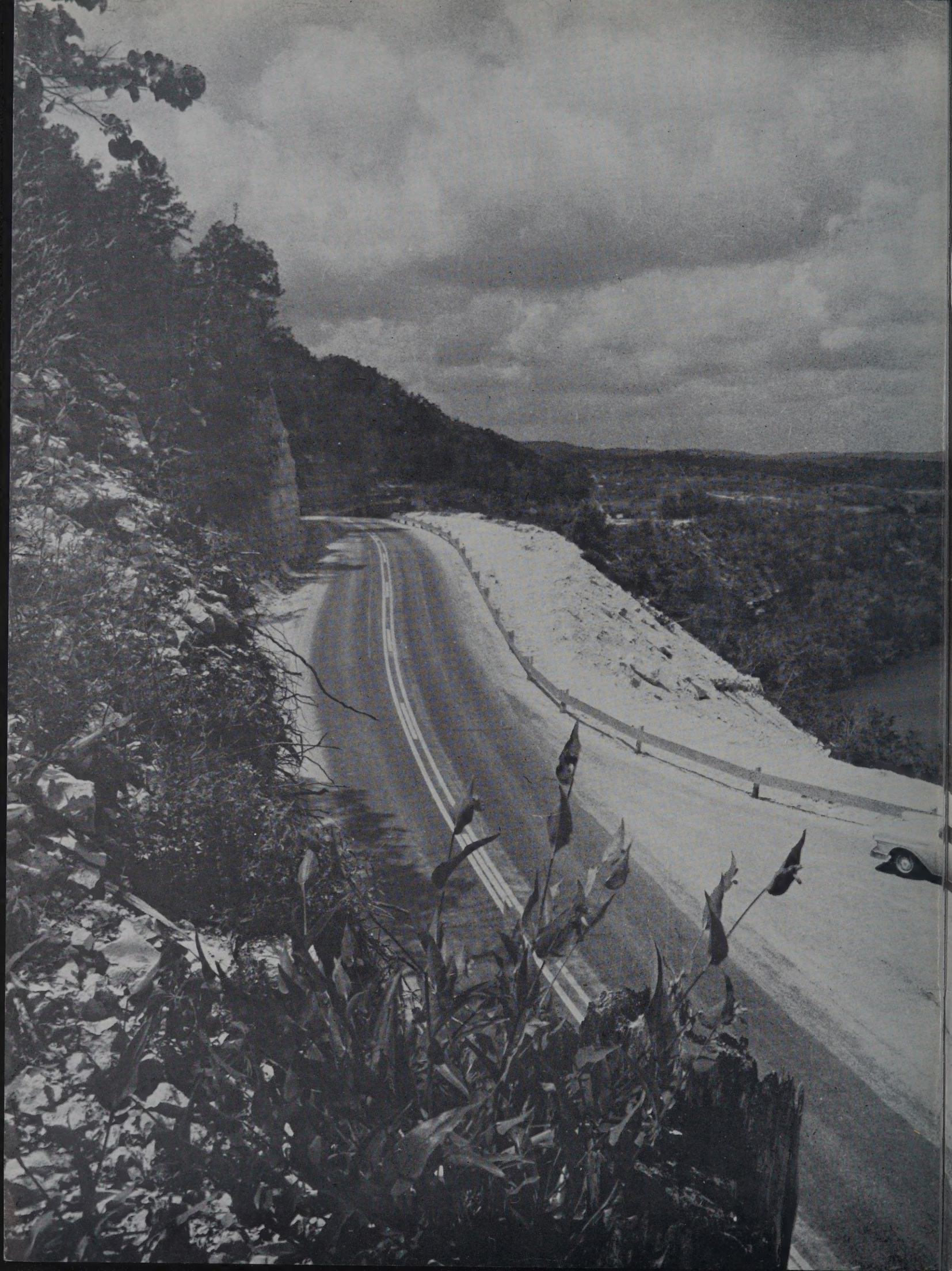
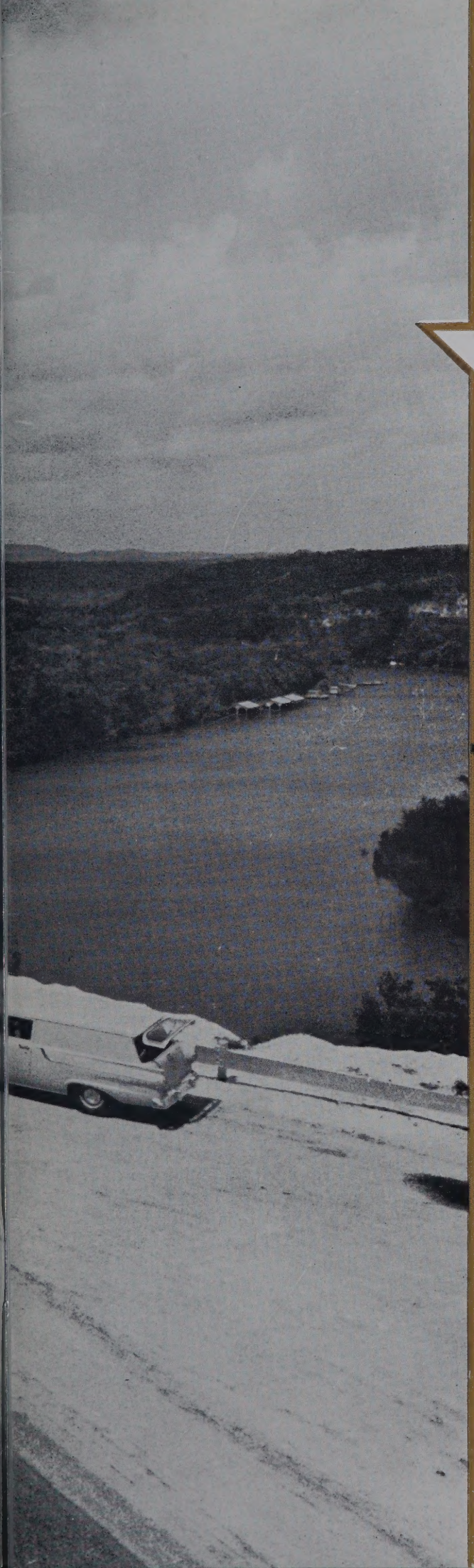
Texas Highways

June, 1961 35c





Texas Highways

Volume 8 • Number 6

June, 1961

Contents

Astro-Azimuth for Texas Highway Department Use	2
Servicing Traffic Lights	6
Bomb Torch Storage Box	8
In the Public Eye	10
Preventive Maintenance	12
News From the Districts	14
Special Equipment Man	18
Over the Highways	23

Astro-Azimuth for Texas Highway Department Use

Rene B. Pernoud, Resident Engineer
District 12

In the progress of a road's right of way alignment planning, the real estate maps showing tracts and subdivision plats are sometimes found at variance with each other and with the State's alignment. If, during proper court litigation, any one or more parts of a plat are found to be in error, the validity of the plat is thrown into question and otherwise clouded. If the State is to be involved in a tract-validity dispute, the people and taxpayers have a right to expect that their highway engineers know more about which is correct than surveys made under adverse conditions with primitive methods. However, these proper expectations do not always obtain, which results in embarrassment and loss of respect for the Highway Department in the courts and the supporting people.

The majority of bearing disputes involving the Highway Department surveyor place him in the position of substantiating a bearing which, in a great majority of cases, may have had one of the following bases:

1. The translated assumed correct bearing on an existing line in the vicinity of the proposed work.
2. A magnetic bearing.
3. Celestial observation.

The first has the following implied disadvantages: An error may have been incurred in the translation, or the bearing which is translated is incorrect. In any event, the surveyor is trusting the accuracy of his work on an earlier work employing at best more tedious and error-liable methods.

The second is seldom more accurate than one quarter of a degree, presuming that no local magnetic or electromagnetic influences are present.

The third has been used by very few people and usually with long, tedious, and error-fraught methods.

Shorter methods outlined in the form of instructions to surveyors have been borrowed from nautical astronomy because of brevity and lesser academic prerequisites in the hope of giving the highway surveyor a surer basis for his bearings. The bulk of the computations have already been made and their results tabulated on the basis of Greenwich Mean Time.

DETERMINING THE BEARING OF A LINE BY OBSERVING THE NORTH STAR WITH A SURVEYOR'S TRANSIT

The North Star is also called the pole star, or Polaris. Information about this star is published in the American Nautical Almanac.

Step 1: Set up the transit over a point on the line. Sight another point on this line about ten stations away. Bring vernier to read 00° 00′ 00″ while sighting this point, and then lock the transit's lower motion. A small light, set over or on the point being sighted is necessary. A flashlight or oil lantern may be used for this purpose. The transit must be level.

Step 2: Measure the horizontal angle between the line and the pole star. To see the star in the cross hairs, the telescope will have to be elevated to the latitude of the place of observation (about 30° for our locality). While Polaris is in the cross hairs note the time and the horizontal angle, degrees, minutes, and seconds. Time should be accurate to the minute.

Repeat this observation at least three times for accuracy and detection of mistakes. Another small light is necessary to make the cross hairs visible.

Step 3: The remainder of the work may be done in the office as follows:

(a) Determine the longitude and latitude of the place of observation from a map at least to the nearest degree. Use U. S. Coast and Geodetic Survey maps or U. S. Engineer's Quadrangle Maps for this.

(b) Our watches show Central standard time, which is six hours earlier than Greenwich mean time (abbreviated G.M.T. in the Nautical Almanac). Add six hours to our time as shown on a 24-hour clock (military time) to obtain G.M.T.

(c) In the Nautical Almanac's daily pages, turn to the page showing the G.M.T. of the observation and take out the number in the column named Greenwich Hour Angle of Aries (abbreviated G.H.A. of τ).

(d) Subtract the longitude of the place of observation from the G.H.A. of τ. (If necessary, add 360° to the G.H.A. of τ). The remainder will be the Local Hour Angle of Aries (abbreviated L.H.A. of τ).

(e) In the rear pages of the Nautical Almanac under the table named Polaris, the azimuth of Polaris may be found opposite the observer's Local Hour Angle of Aries and Latitude. Take out this azimuth.

(f) Combine the horizontal angle between the line and the azimuth of Polaris as determined in Step 2 to find the bearing of the line. This completes the job.

Note: This must be done separately for each of the three or more observations and the average of these bearing thus found is the bearing of the line.

LIST OF ABBREVIATIONS USED IN THIS TYPE OF WORK

1. G.M.T.—Greenwich mean time.
2. G.H.A.—Greenwich hour angle.
3. τ—Aries.
4. C.S.T.—Central standard time.
5. W.T.—Watch time.
6. W.E.—Watch error.
7. λ—Longitude.
8. L.—Latitude.
9. Az—Azimuth (bearing).
10. L.H.A.—Local Hour Angle.
11. N.A.—Nautical Almanac.

FINDING ERRORS IN THE DEFLECTION ANGLES OF A LONG BASE LINE OR MEANDER BY USE OF TWO SURVEYORS' TRANSITS AND THE NORTH STAR (WITHOUT STAR INFORMATION TABLES OR ASTRO-COMPUTATION)

This method is accurate to 00°-06′ of arc; that is to say that the maximum error incurred by the end points (A and Ω in Figure 1) of the meander line having different geographic positions is six minutes, providing the longitude of the two points differs by not more than one degree and their latitude differs by not more than one degree.

LIST OF EQUIPMENT:

2 Surveyors' transits
2 oil lanterns
2 small flashlights
2 range poles
2 watches

LIST OF PERSONNEL:

2 transit men
2 range light men

Step 1: Both watches are made to read the same time (to the nearest minute). Instrument men agree at what watch time they will sight the pole star in their respective transit cross hairs.

Step 2: One party of two men works at the first tangent, with instrument set over point A and the second party occupies the last tangent with their instrument set over point Ω.

Step 3: The range-light men take positions on their respective tangents about ten stations away from the instrument point, if possible. Range light men should hang their lanterns on range poles or other suitable devices, so that the point source of their light is plumb over the line.

Step 4: The instrument men sight down their respective lines, bringing target lanterns or lights into their transit cross hairs setting, and clamping the transits' lower motion so that they read 00° 00′ 00″ while on the target light, then free the upper motion.

Step 5: The transits are then swung to sight the north star in their cross hairs. The transit's upper motion is clamped and fine adjustment or vernier-screw operated so as to be on the pole star at the prearranged watch time. At this time the angles ∝ and Ω are read by the instrument men.

Step 6: The difference between the angles ∝ and Ω should equal the difference between all of the right deflection angles and the left deflection angles of the meander—if there are no errors in any of the deflection angles. If there are errors, the net sum of these errors is equal to the amount by which the star angles' net sum didn't equal the net sum of the deflection angles.

These arrors may be traced to the particular points of intersection (P.I.'s) by halving or quartering the meanders length and repeating the whole process described above.

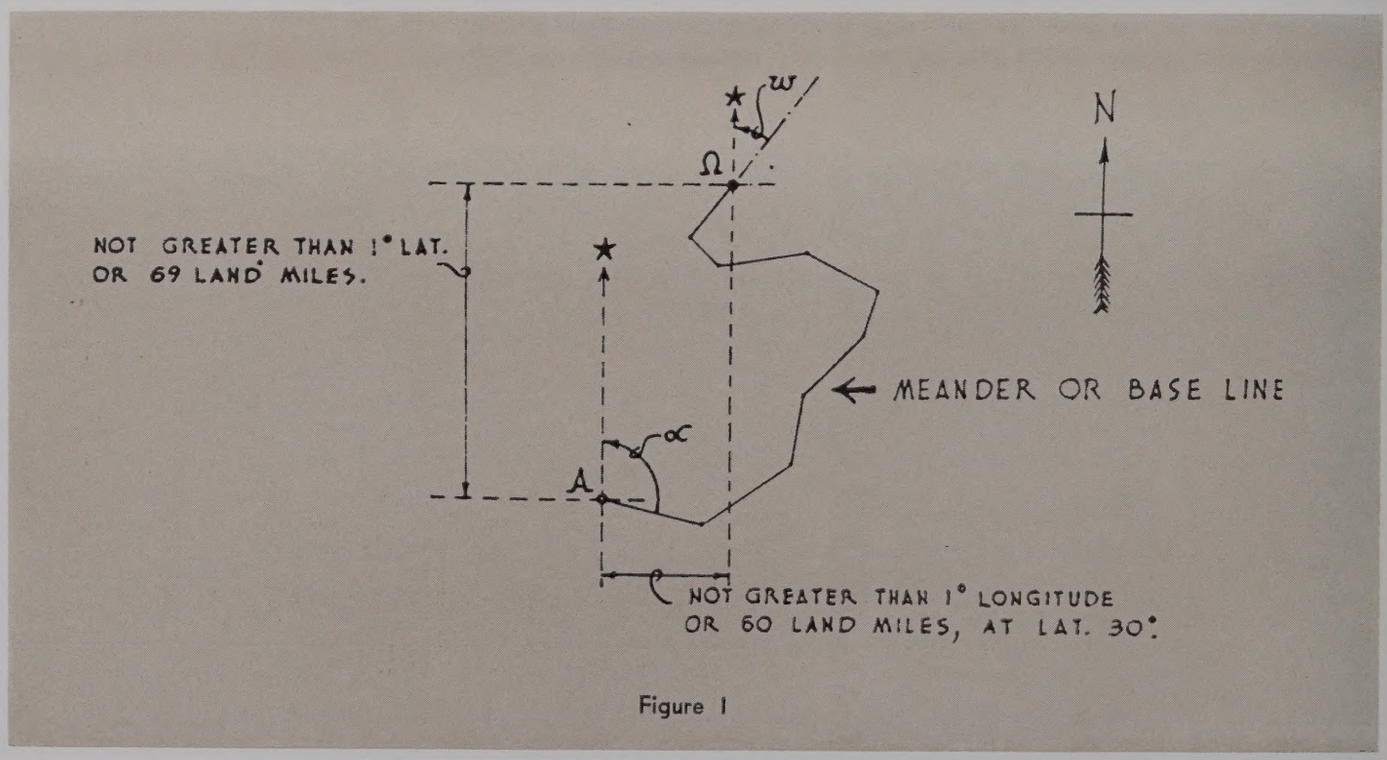


Figure 1

DETERMINING THE BEARING OF A LINE FROM AN OBSERVATION OF THE SUN, MOON, OR PLANET, AT THE TIME OF THE BODY'S MERIDIAN TRANSIT, (CULMINATION) BY USE OF THE AMERICAN NAUTICAL ALMANAC.

Step 1: Determine the longitude of the instrument's position to the nearest one-tenth of one minute from a map.

Step 2: Enter the Nautical Almanac's daily pages, under the body to be observed with the local date and take out the G.H.A. of the body so that it is the last recorded hourly value just under the instrument's longitude. Also take out the comparable G.M. date and hour for this G.H.A.

Step 3: Subtract the G.H.A. of Step 2 from the instrument longitude, and look in the back-page tables, named "Increments to Greenwich Hour Angles," and take out the minutes and seconds of time corresponding to the G.H.A.-longitude difference.

Step 4: Add this increment of time from Step 3 to the G.M. time from Step 2. The result is the G.M.T. of the body's transit of the instrument's meridian. Subtract six hours from this time and the result is the Central standard (our time) of the body's bearing, due south or north as the case may be.

Step 5: Proceed to field and instrument position and set up transit over point on line, sight distant point on same line about ten stars away and rotate vernier to 00° 00′ 00″.

Step 6: Rotate instrument to point south or north, depending on celestial bodies declination and the latitude of the place of observation.

Step 7: Sight center of body in cross hairs and follow same until meridian transit time of Step 4. Stop the instrument at this point and note angle between said line and body. The instrument will be sighting due north or south and the angle just read will be the amount off of north or south by which the line bears.

Attention is called to the fact that the Greenwich mean date of *local* transit of a body may be the following local date since Greenwich mean time is six hours later than Central standard time, or mean time of the 90th meridian. Also, during the summer the sun is too high, nearly overhead at our latitude, to be of any practical azimuth use. Along this principle, bodies whose declination (listed in A.N.A.) is between N 15° and N 45° should not be used for azimuth from our latitude and those of declination greater than S 61° cannot be used.

Accurate time, suitable for any observation, may be received from the National Bureau of Standard's radio broadcast of U. S. Naval Observatory chronometry on 5, 10, 15, and 20 megacycles.

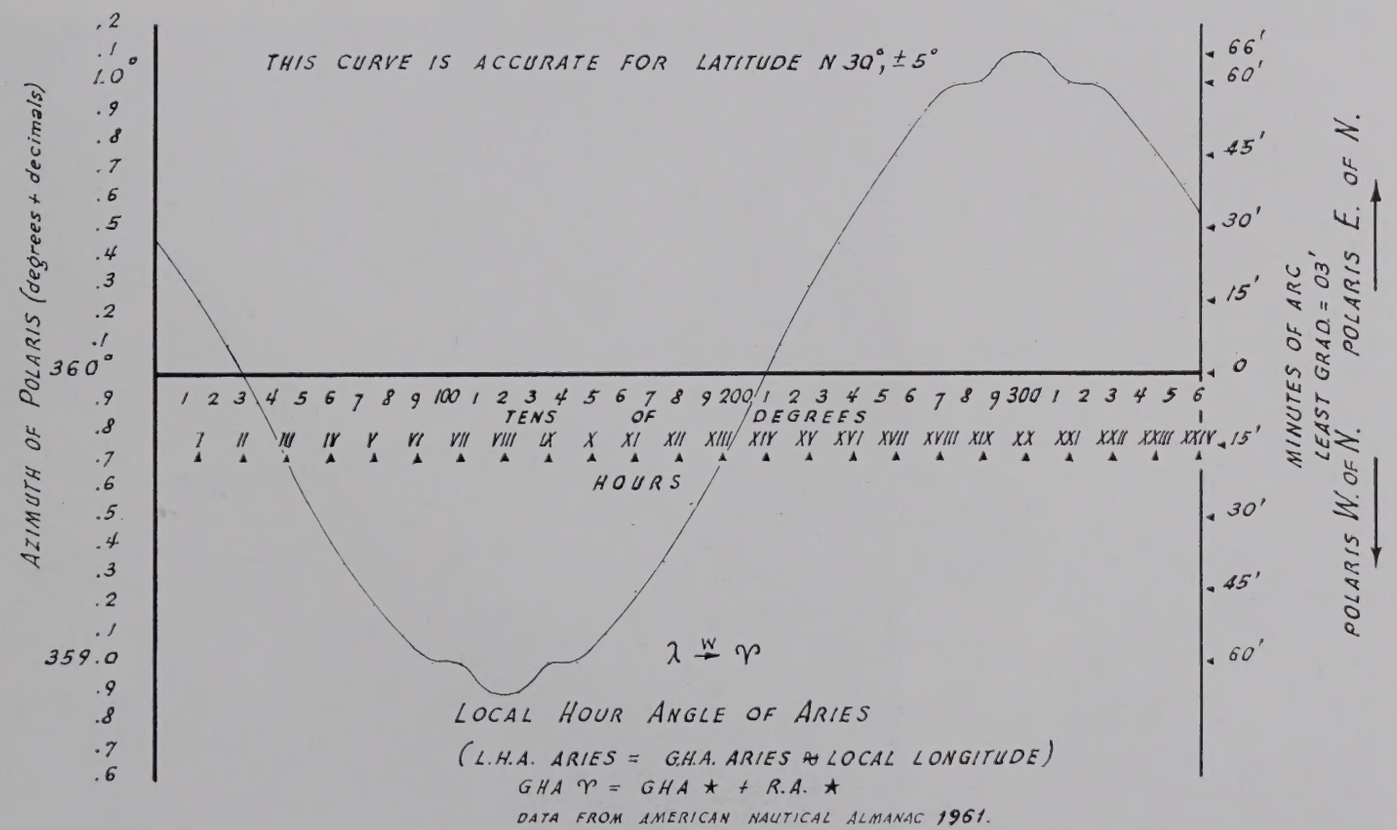

THIS CURVE IS ACCURATE FOR LATITUDE N 30°, ± 5°
AZIMUTH OF POLARIS (degrees + decimals)
MINUTES OF ARC
LEAST GRAD. = 03′
POLARIS E. OF N.
POLARIS W. OF N.
TENS OF DEGREES
HOURS
λ W ♈
LOCAL HOUR ANGLE OF ARIES
(L.H.A. ARIES = G.H.A. ARIES ± LOCAL LONGITUDE)
GHA ♈ = GHA ★ + R.A. ★
DATA FROM AMERICAN NAUTICAL ALMANAC 1961.

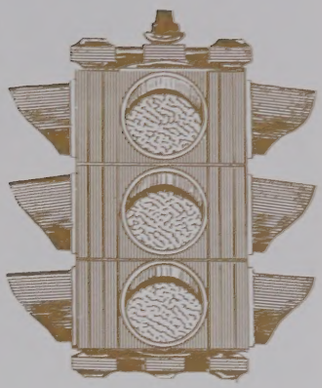
Figure 2

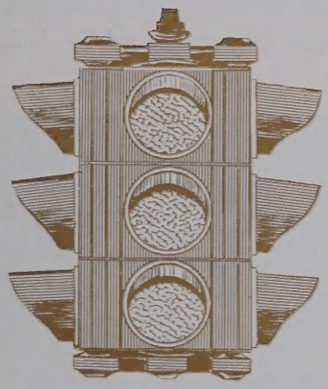
District 6 has an attachment on a motor crane for servicing traffic lights. Pictures explain operation of the attachment, and District Engineer Archie J. Sherrod describes its construction.

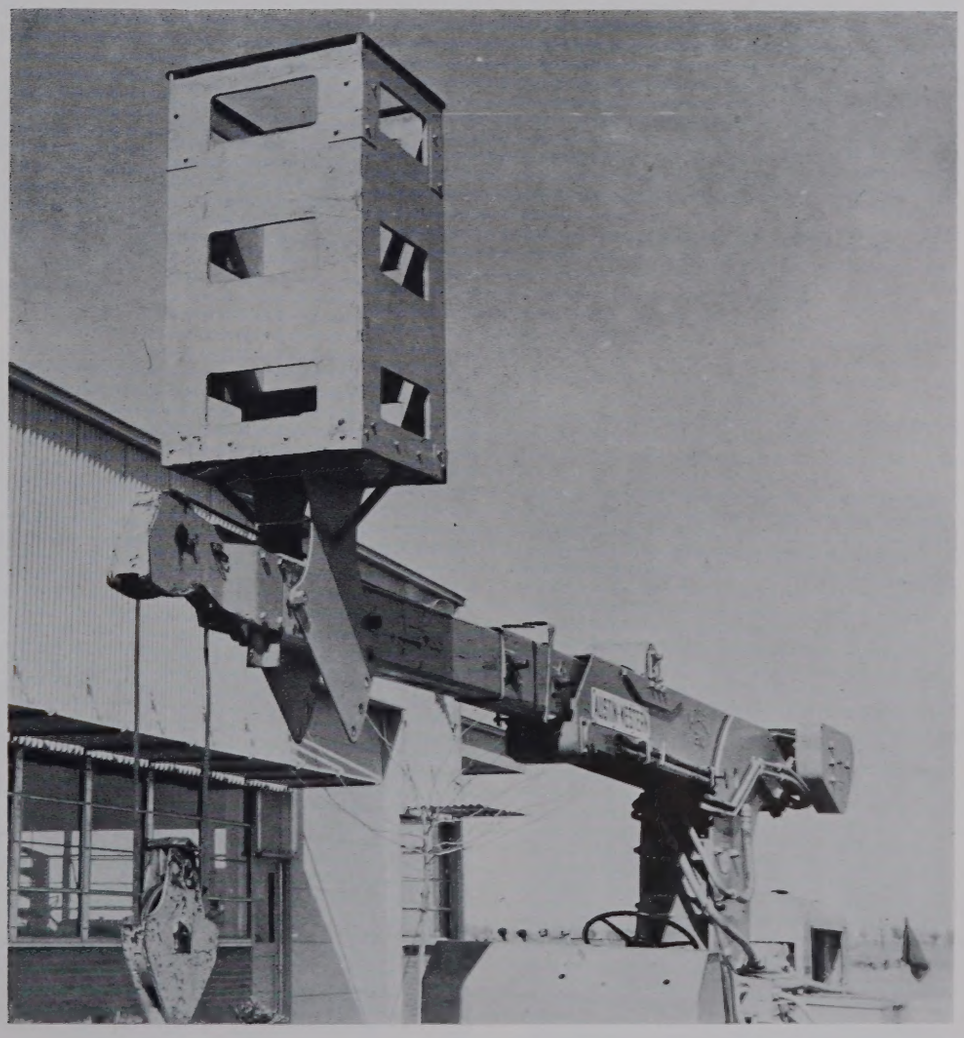
SERVICING TRAFFIC LIGHTS

"The base plate and mounting brackets are constructed of three-sixteenths-inch steel sheet. A series of holes were drilled in the side members to maintain a vertical position of the box at various heights. An angle-iron frame was welded on the base plate to facilitate mounting of the three-fourths-inch plywood side members of the box. The box has metal corner brackets at upper extremity to add rigidity. Also, the upper edge of the attachment is faced with rubber hose to prevent torn clothing and splinters. After construction of the box was completed, a piece of plywood with rubber mat attached was inserted within the box to prevent conductivity."

AUSTIN-WESTERN







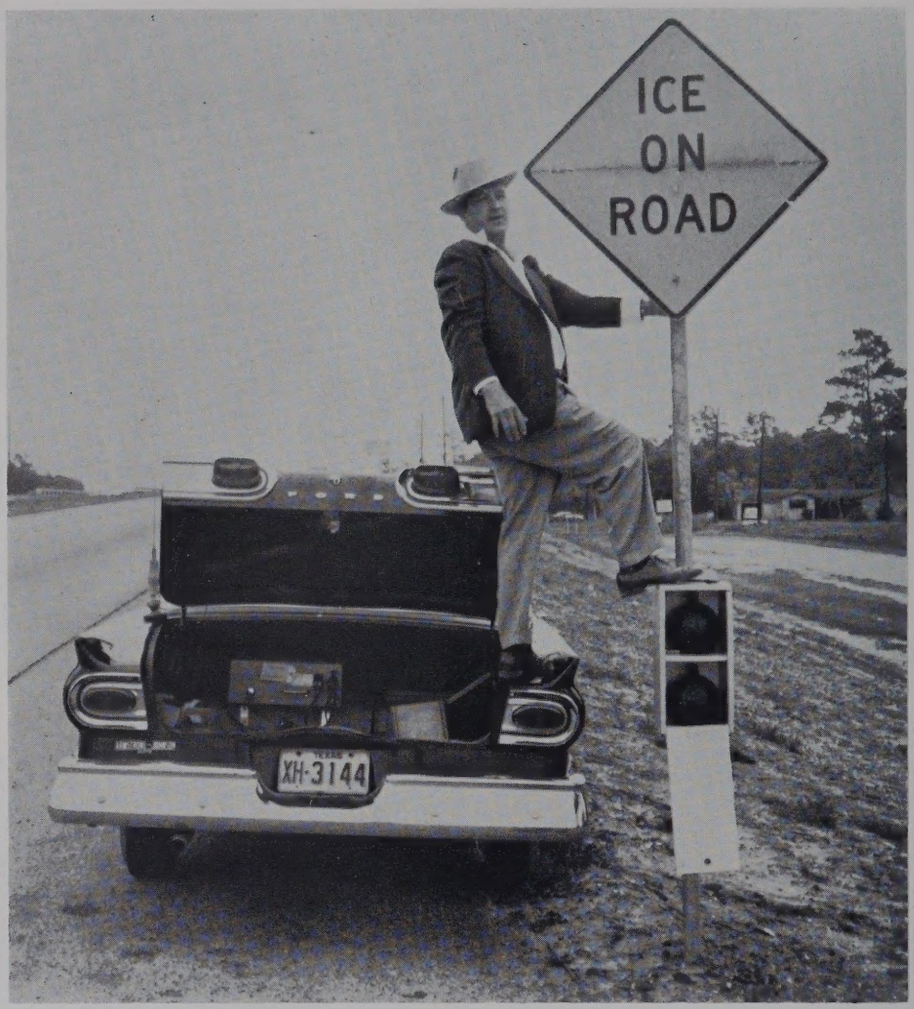
Bomb Torch Storage Box

Trudy E. Carter,
Junior Office Assistant
District 12

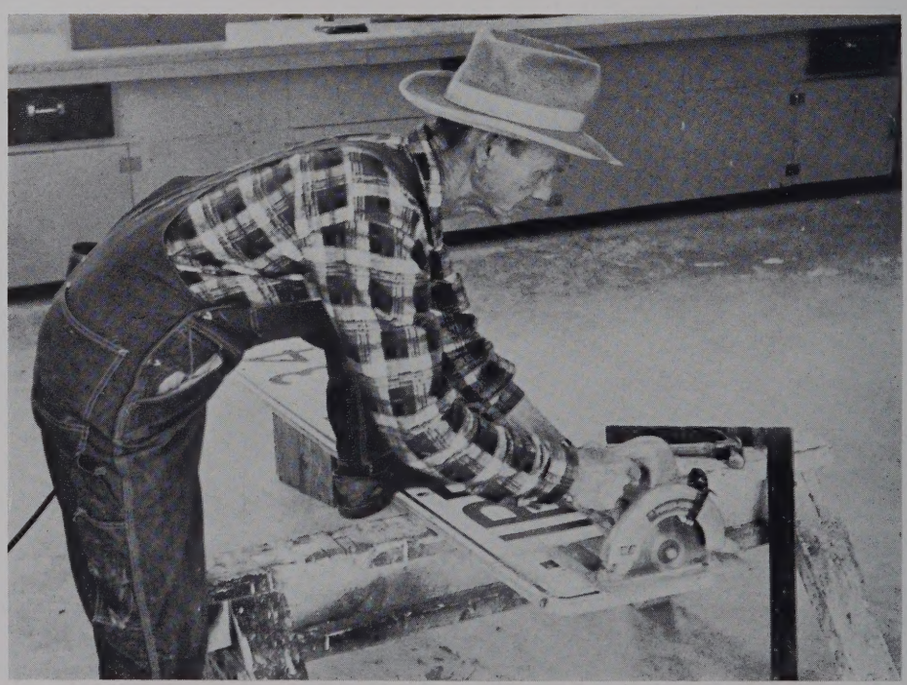
A friend to a Highway Department maintenance man is anything that saves him time, labor, and money. As time goes by, maintenance men have been creating their own friends to aid not only themselves, but the entire Highway Department.

Such is the case with J. L. Stephenson, Senior Maintenance Foreman, and Douglas E. Parsons, Utility Man, from the Genoa Warehouse in District 12, Houston. Stephenson and Parsons have designed and built a bomb-torch box to house torches for icy weather conditions. These boxes are equipped with two torches, a four-inch-square piece of sandpaper, and a penny box of matches wrapped in cellophane paper.

These boxes are constructed of two muffler clamps and pieces of five-eighths-inch plywood salvaged from old sign material. The material and labor together cost less than $3 per box. Plans to construct similar boxes from metal are being studied.



One man can erect signs and place torches, here demonstrated by J. L. Stephenson, Senior Maintenance Foreman.



Douglas E. Parsons, Utility Man in the Genoa Warehouse, constructs one of the storage boxes for torches.

Icing conditions are seldom encountered in District 12, and because of this, motorists need all of the help the Highway Department can give them to warn of treacherous road conditions. Therefore, the placement of torches at the opportune time is of vital importance. The major advantage to the use of the boxes is the saving in time, man power, and equipment. Formerly, when weather conditions required the use of torches, a crew of men and a truck loaded with torches were dispatched to distribute and position the torches. Now, with the torches stored at the sign locations, two men in a pick-up truck can rapidly set out the torches in a substantially shorter period of time. The saving of time and man power leaves the majority of men and equipment ready to meet other emergencies—thereby lives may be saved during hazardous weather conditions.

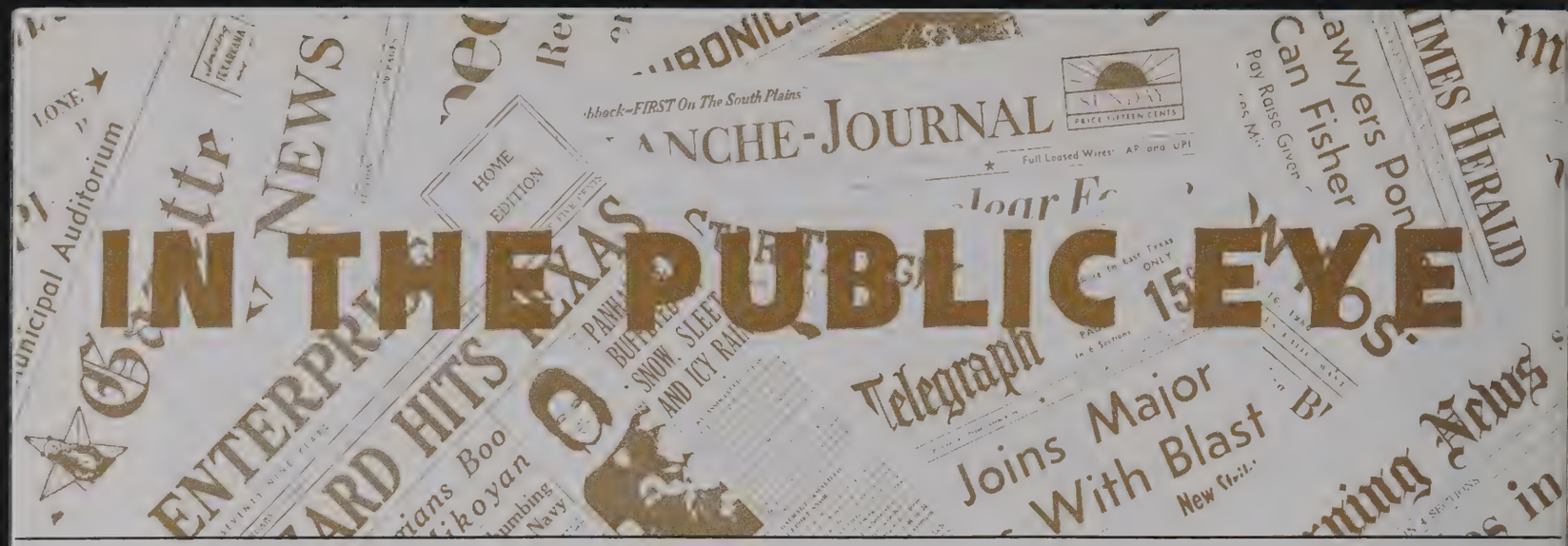
This storage box, mounted on a post with a folded caution sign, is located on S. H. 73, Houston.

Storage box . . .

. . . front view, open,

. . . front view, closed,

. . . back view.



A SHOT IN THE ARM

Breckenridge American, in quoting Commission Member Hal Woodward's words to the U. S. Highway 180 Association—" 'The Interstate System will be the greatest stimulant for highway travel that this country has ever seen. Far from being unwanted stepchildren, our U. S. highways such as 180 will be valued partners in bearing this tremendous load of expected traffic.' "

Dallas Morning News, datelined Breckenridge—"The U. S. Highway 180 Association was told Monday that the Texas Highway Department plans within 90 days to place a $1,250,000 contract to raise the level of the highway near Breckenridge above the level of Hubbard Creek Reservoir.

"District Engineer E. M. Pritchard of Brownwood said the project would cover 7.3 miles of U. S. 180 west of Breckenridge and would include a 3,800-foot bridge to span an arm of the lake. It would be an 18-month project, Pritchard said."

WE'RE TOPS

Wichita Falls Times, in a Bureau of Public Roads report from Washington—"The Lone Star State surpassed all other states in the amount of funds contracted for federal-aid secondary highways last year. . . . Only four states outranked Texas in contracts for federal-aid state and interstate highways."

IN HIGH GEAR

Valley Morning Star, from McAllen—"The Marshall Formby U. S. 83 Expressway program is 'now rolling in high gear.' . . . Herbert C. Petry Jr., chairman of the Texas Highway Commission told an audience of about 500 at expressway dedication ceremonies Sunday afternoon . . . Petry represented Gov. Price Daniel at the opening.

"Marshall Formby, for whom the expressway was named . . . cut the ribbon.

"Petry said that with the ultimate completion of the expressway 'the future of tourism in the Valley seems brighter than ever' but warned that unless an effective state program of tourist advertising is put into operation 'this fine highway might become a boulevard of broken dreams.' "

NONSTOP

Kilgore News Herald, covering an employee's speech—"By 1972, it should be possible to motor across the entire United States without having to stop for a signal light, stop sign or grade crossing, W. W. Potter, district engineer . . . told Tyler Rotarians. . . .

"Speaking generally on the interstate system, Potter said that despite current preoccupation with rockets and space travel, 'highways remain basic to movement of goods and people.'

"He indicated the new interstate system, when completed, will connect every city in the nation of 100,000 or greater population. He also pointed out the national defense value of such a system in case of enemy attack."

HERE'S HOW

Waco News-Tribune, reporting that—"Tom Collier, district engineer of the Texas Highway Department, explained to delegates to the Community Growth Conference how streets and highways fit into urban expansion.

"He said, a freeway, like Interstate 35, breathes life into the central section of a city.

"Collier said if current Waco Drive traffic at its heaviest period suddenly were transferred to a freeway, the freeway would be at half capacity."

El Paso Herald-Post, with a subheadline, "Drive under the Road to Reach Other Side; Old Sandhills Becomes One-way Eastbound—The new Interstate 10 East El Paso Freeway opens Wednesday at noon for the completed portion starting on the west near Airway boulevard and extending east just beyond Zaragosa road. District Engineer E. W. Mars of the State Highway Department today issued information that could be called 'Instructions on How to Use the Freeway' for benefit of El Paso area motorists who are not familiar with a modern freeway."

STEP IT UP

Reporter-Telegram (Midland) editorially—"The Texas Highway Department is stepping-up its anti-litter campaign in advance of the tourist season.

"It should have the all-out support and cooperation of every organization and agency throughout the Lone Star State.

"More than that though, the campaign merits YOUR individual assistance. In fact, it can't succeed without YOUR help."

A DANGEROUS DROP

Houston Post, through Associated Press—"State Highway Engineer D. C. Greer said Wednesday a continuation of the drop in motor fuel tax revenue could seriously affect future highway programs.

"Revenues are running 3.5 per cent

less than expected, which has deprived the department of $3 Million in the last eight months, he said."

SPANORAMA BRIDGE

Houston Press, saying—"The State Highway Department plans to open a 'spanorama' bridge—perhaps the highest in Texas over dry land—next July 15 to Post Oak motorists at the $3.5 million Southwest Freeway-West Loop interchange.

"A. C. Kyser, state urban expressway engineer, said today that work on the bridge is speeding toward that finish date. . . ."

!N FORWARD DRIVE

Waco News-Tribune, announcing that —"The Waco Chamber of Commerce Highway Committee Thursday began preliminary planning for six-laning of U. S. Highway 6 between the Circle and Waco Drive.

"District Highway Engineer Thomas C. Collier said the state now has sufficient land holdings on either side of the present highway to meet the demands for planned improvements."

Hereford Brand, editorially—"Well ahead of schedule, and long before any of us realize it, U. S. Highway 60 will be back in operation through town with a modern, four-lane roadway.

"Highway 60 is a transportation artery which has served the community well, and from what we can see it is destined to provide an even greater service for us in years to come."

Texarkana Gazette, calling attention to forthcoming highway development there—"Resident Engineer Lawrence Jester of the Texas Highway Department said Wednesday [to Noon Optimist Club members] his department hopes to start work on Interstate 30 in Bowie County next spring."

Houston Post, observing that—"Harris County officials and civic groups have started a forward-looking movement, seeking a 10-mile highway link to connect the Gulf Freeway near South Houston with the prospective Fairmont Parkway into La Porte and Sylvan Beach.

". . . At the present rate of settlement, it will not be long until recreation and bayshore home seekers will be discouraged from going there unless more highways are provided. . . ."

Corpus Christi Caller, relating—"The Texas Highway Commission in Austin yesterday approved the proposed route for Interstate 37 between Corn Products Road and Calallen."

Del Rio News-Herald, informing readers—"An access road to the site of Amistad Dam today was designated a spur highway by the Texas Highway Commission in a move to speed construction.

"Work on the access road will be the first actual construction in connection with the huge international dam astride the Rio Grande."

HALF WAY

Hillsboro Evening Mirror, viewing progress of Interstate Highway signing in Hill County—"Edward L. Smith, senior traffic engineer, Waco, in charge of the project, said that approximately 50 per cent of the sign supports and foundations are completed but only a few of the sign faces have been installed.

"Smith described the project as the first interstate highway signing job to be contracted in Texas."

STREAMLINED

Port Arthur News, editorially pleased with the opening of Savannah Avenue extension—"You simply won't recognize the state-built route.

"Most oldtimers remember the old beaten-up stretch, probably, as part of the El Vista road, which had more curves than Marilyn Monroe and more angles than a problem in geometry.

"The Savannah Extension is 1.8 miles long. From 19th to 25th you'll find a 44-foot wide section paved with curbs and gutters. Next there's a 1000-foot wide paved stretch without curbs. There follows a 1500-foot sector of flexible base surface traversing the low 'bayou' area—it's 24 feet wide with two eight-foot asphalted shoulders. From the north end of the flexible base to the shoreline, the road is paved.

"You'll enjoy it."

ADDED VALUE

Houston Post saying—"Elevated freeways may add to a city's beauty and not detract from it, two Houston city planners said Tuesday.

"Ralph Ellifrit and Eugene Maier told the Houston Planning Commission that landscaped parking areas could be created beneath an elevated loop the state plans to build around the downtown business section.

". . . the value of property abutting on the freeways would thereby be increased, and not reduced, as some have feared."

MARSHALLING THE FACTS

Marshall News-Messenger, pointing out—"The Texas Highway Commission Thursday authorized the highway department to make a detailed study of the traffic needs in and around the city of Marshall.

"A survey of the needs here has been underway for some time but G. A. Youngs, district engineer, said the new authorization will allow the department to go into much more detail than in the earlier study."

INTERSTATE ITEM

Waco News-Tribune, on fiscal matters —"House voted Thursday to channel an additional $11.7 billion into the federal interstate highway program—and raise the money largely with higher taxes on highway users.

"A major provision continues the one-cent portion of the federal gasoline tax which otherwise would drop off July 1."

BETWIXT AND BETWEEN

News-Telegram (Sulphur Springs), noting—"Two sections of Interstate Highway 30 west of Sulphur Springs were open to traffic Monday afternoon following completion of a construction project under way since last October 3. Removal of the barricades from the two stretches of the highway's main north traffic lanes restored four-lane facilities on the superhighway all the way between Sulphur Springs and Dallas."

Preventive Maintenance

R. N. Jennings, District Maintenance Engineer
District 7

The best method to lower maintenance cost for equipment is to service it at the prescribed interval. It is necessary to have some simple method of record keeping to insure that lubrication, oil changing, and other servicing are done at the proper time.

The Junction Maintenance Section has adopted a board for this record keeping which was copied from one noted in the Jacksboro Maintenance Section. A photograph of the board is shown.

Supervisors in District 7 are required to keep a simple record on each piece of equipment that needs regular service. This record shows when the equipment is serviced. Records are reviewed by the District Equipment Supervisor monthly to determine if the equipment is being properly cared for.

Samples of the form being used for this record keeping are shown.

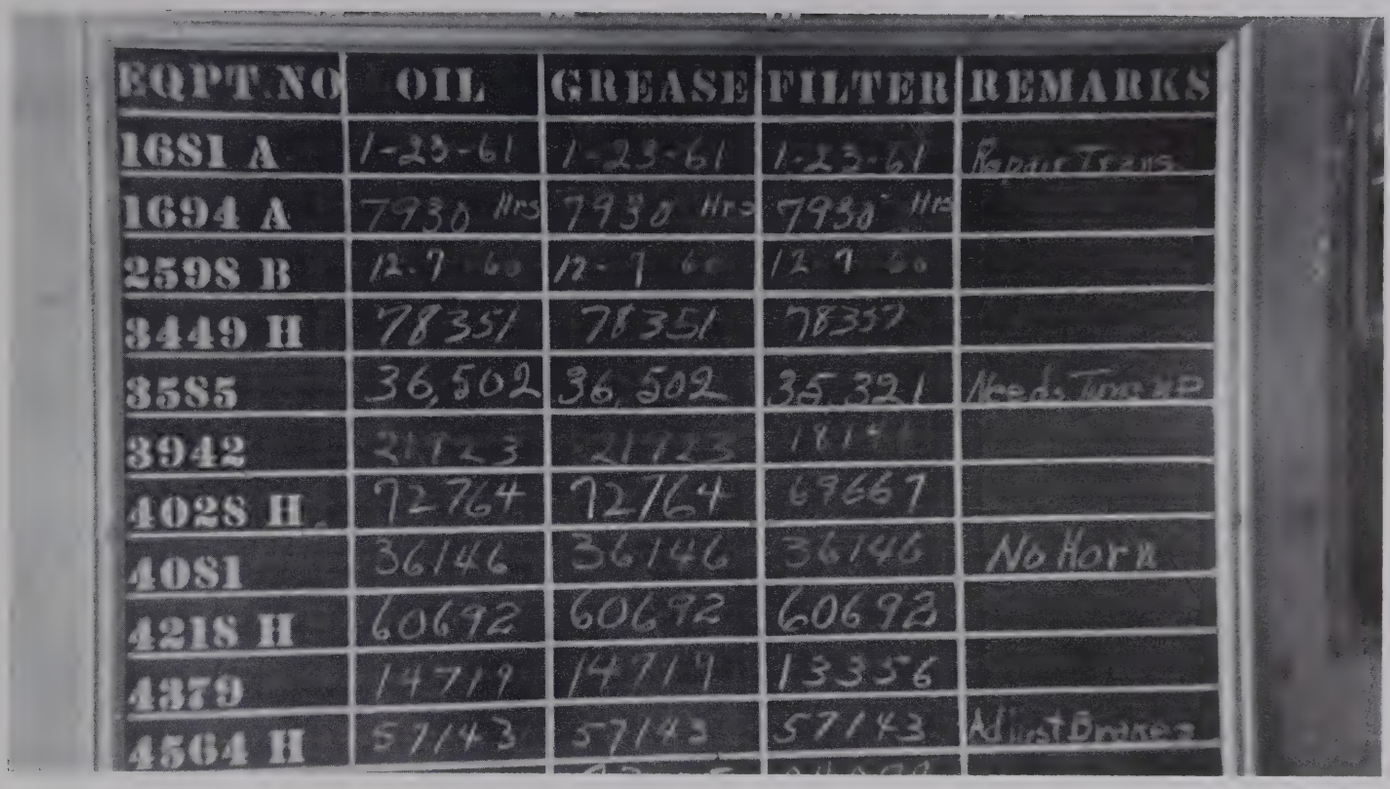
Equipment Report

EQUIPMENT NO. 4090-H — FEBRUARY 1961

DATE	METER READING	CHECK: LUBRICATION	CHECK: OIL CHANGE	CHECK: WASH	CHECK: BATTERY	CHECK: TIRE PRESSURE	CHECK: NEW TIRE	CHECK: REPAIRS	REMARKS
1	44958								
2	45044								
3	45117								
4	--								
5	SUNDAY								
6	--								
7	--	X	X						New Spark Plugs, Tail Pipe and Muffler
8	45180								
9	45270								
10	45357								
11	--								
12	SUNDAY								
13	45430								
14	45501								
15	45570								
16	45644								
17	45723								
18	--								
19	SUNDAY								
20	--								
21	45767								
22	--								
23	45840								
24	45911								
25	--								
26	SUNDAY								
27	46020	X	X				X		New Filter; New Tire & Tube 650x16
28	46088								New Tire No. ZA 23818P
29									
30									
31									

NOTE: Place X in space to show date work performed. Under remarks, show serial no. of new and old tires. Kind of repairs, work orders, transfer breakdown, etc,.

G. L. Rogers
(Signed)



EQPT NO	OIL	GREASE	FILTER	REMARKS
1681 A	1-23-61	1-23-61	1-23-61	Repair Trans
1694 A	7930 Hrs	7930 Hrs	7930 Hrs	
2598 B	12-7 60	12-7 60	12-7 60	
3449 H	78351	78351	78357	
3585	36,502	36,502	35,321	Need Tune up
3942	21123	21123	18141	
4028 H	72764	72764	69667	
4081	36146	36146	36146	No Horn
4218 H	60692	60692	60692	
4379	14719	14719	13356	
4564 H	57143	57143	57143	Adjust Brakes

EQUIPMENT REPORT

EQUIPMENT NO. 3691 Feb 1961

CHECK

DATE	MILEAGE	LUBRICATION	OIL CHANGE	WASH	BATTERY	TIRES	NEW TIRES	REPAIRS
8	24879				✓	✓		lights & brakes ck
13					✓	✓		lights & brakes ck
20					✓	✓		lights & brakes ck
27					✓	✓		lights & brakes ck

NOTE: Place X in space to show date work performed. Under remarks, show serial no. of new and old tires, kind of repairs, work orders, transfer breakdown, etc,.

(SIGNED) W E Bryant

EQUIPMENT REPORT

EQUIPMENT NO. 3585 Feb 1961

CHECK

Gr + oil Change 35321
Oil Filter 35321

DATE	MILEAGE	LUBRICATION	OIL CHANGE	WASH	BATTERY	TIRES	NEW TIRES	REPAIRS
	35083							
3	36756	X	X		X	X	X	new 4 low Mat Checkers
8								X Instl Plugs + Points Tune Engine Grease Slips on Dump Body
14	37636							
15	37636	✓	X		X	✓	X	Check Axles
24	3825							

NOTE: Place X in space to show date work performed. Under remarks, show serial no. of new and old tires, kind of repairs, work orders, transfer breakdown, etc,.

(SIGNED)

News From the Districts

Area Luncheon

District Engineers in the "Iron-Ore Area" of East Texas had a luncheon meeting in Lufkin in April. Primary purpose of the meeting was to discuss availability, royalty, and other matters pertaining to iron-ore gravel base material.

Other topics of common interest were discussed, and according to J. M. York, District Engineer at Lufkin, it was the opinion of all concerned that the discussions were profitable.

Representatives at the meeting were district engineers from Districts 10, 11, 12, 17, 19, and 20, and staff members.

Testimonial

Members of the Highway Commission and State Highway Engineer D. C. Greer were honored at a testimonial luncheon in April by the Highway and Public Works Committee of the San Antonio Chamber of Commerce.

Civic, business, and political leaders from Bexar and 39 other South Texas counties, numbering around 250, were invited to pay tribute to the Texas Highway Department for "efficient management of the vast program of super roadways underway in Texas," according to Highway Chairman James W. Francis.

Highway personnel attending the luncheon included District Engineer M. G. Cornelius and District Maintenance Engineer Earl Wyatt from District 13; District Engineers T. O. Foster (16), J. F. Snyder (21), C. N. Parsons (22), and R. O. Lytton (15).

Attending an area luncheon in Lufkin are, left to right, District Engineers J. M. York, W. E. Simmons, and G. A. Youngs; R. L. Rothe, Assistant District Engineer; and J. G. Hanover, District Administrative Engineer.

On the other side of the table—W. L. Stockton, District Administrative Engineer; E. D. Parmer, District Administrative Engineer; and District Engineers W. E. Carmichael, W. W. Potter, and C. B. Thames.

At the head table are honorees of the testimonial luncheon in San Antonio. Left to right are Commissioner Hal Woodward; Jim Gaines, president of the San Antonio Chamber of Commerce; State Highway Engineer D. C. Greer; J. W. Francis, chairman of the highway and public works committee of the Chamber of Commerce; Commission Chairman Herb Petry; Dr. James W. Laurie, president of Trinity University; Commissioner Charles Hawn; and J. C. Dingwall, Assistant State Highway Engineer.

Community leaders from 40 South Texas counties attended the luncheon honoring the Highway Department.

District Engineer L. D. Cabaniss questions C. J. Keese during one session of the conference.

Tom Hagood, Keese, and Joe Wright compare thoughts.

Others from District 15 attending were District Administrative Engineer W. R. Faust and District Construction Engineer W. C. Raby.

Also, Commissioners Hal Woodward, Herb Petry, and Charles Hawn, and State Highway Engineer D. C. Greer and Assistant State Highway Engineer J. C. Dingwall.

Urban Traffic Conference

The second in a series of Planning, Design, and Operation of Urban Traffic Facilities Conferences was held in Tyler in May. Host district engineer for the meeting was W. W. Potter.

In welcoming delegates to the conference, Joe Wright, Traffic Survey Manager of Planning Survey Division and president of the Texas Section of the Institute of Traffic Engineers, outlined the purposes of the conference—To gain a better understanding of the problems and philosophies of the agencies responsible for urban traffic; to develop closer relationship between the individuals representing these agencies; and to provide opportunities for those individuals to become better acquainted.

The conference was sponsored jointly by the Texas Section, Institute of Traffic Engineers, the Texas Municipal League, and the Texas Highway Department, and was under the direction of the Highway and Traffic Engineering staff of the Texas A. & M. College.

District engineers and personnel from Districts 1, 2, 9, 10, 18, and 19 participated.

New Tourist Bureau

A ribbon-cutting ceremony officially opened the new Tourist Bureau on Interstate 10 west of El Paso in May. County Judge Woodrow W. Bean; District Engineer E. W. Mars; Tom Taylor, Director of Travel and Information; and Judson F. Williams, president of the Chamber of Commerce, participated in the ribbon-cutting ceremony, which was attended by state, chamber of commerce, and local governmental officials. Chris P. Fox was master of ceremonies.

Speaker Terrell Blodgett sits with District 14 group Travis Long, Mulkey Owens, and Tom Wood.

District Engineer Gilbert Youngs visits between sessions.

A Chamber of Commerce promoted tour of El Paso ends up at the new Tourist Bureau on the Texas-New Mexico boundary.

Left to right are Judson Williams, El Paso Chamber of Commerce President; Joe Alexander, Chief of the new Tourist Bureau; Tom Taylor, Director of Travel and Information for the Highway Department; Chris P. Fox, past president of the El Paso Chamber of Commerce; and E. W. Mars, District Engineer.

The ribbon cutting over, guests view the interior of the Tourist Bureau.

The building, on Interstate Highway 10, is constructed of native stone and wood.

In the Odessa district, Midland Section, there is a man—M. S. Timmons, Skilled Laborer—who has developed numerous equipment ideas through his some 23 years with the Department. E. R. McCarty, Senior Maintenance Foreman, details five of them below.

Special Equipment Man

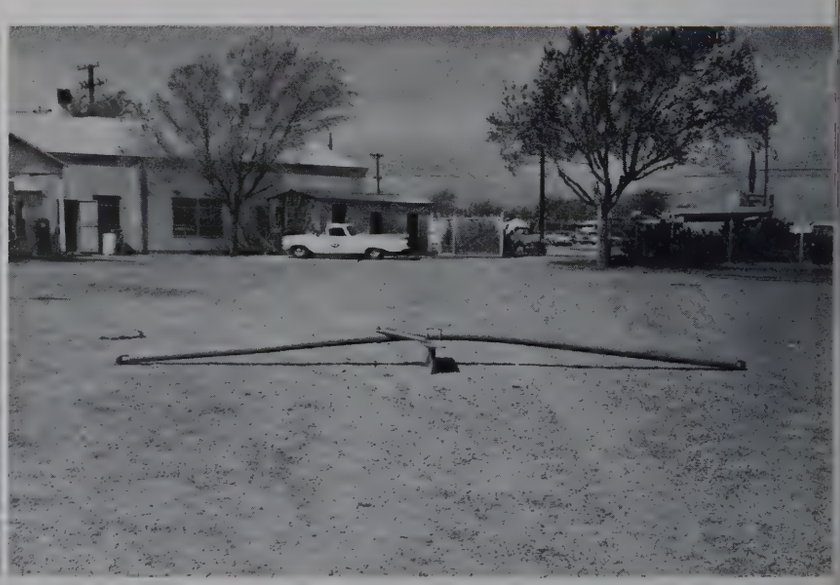
E. R. McCarty, Senior Maintenance Foreman
District 6

CULVERT CLEANER

When the sand blows in West Texas, culvert cleaning becomes a major operation. Pictured is a culvert-cleaning tool constructed with three-inch pipe, salvaged I-beam, and sections of grader blades.

Culvert cleaner—close up.

Culvert cleaner—full view.



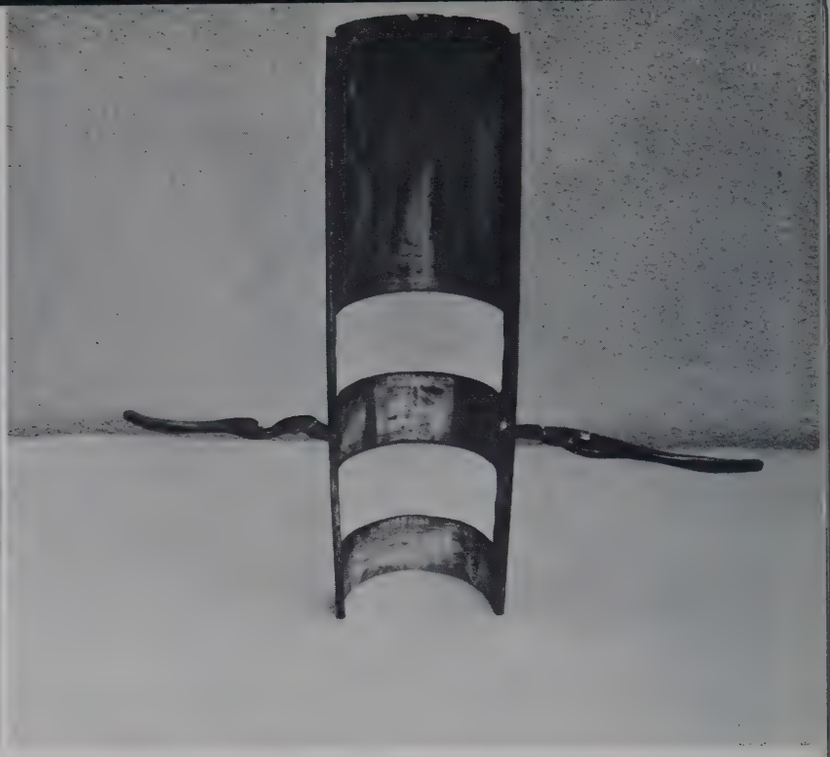
Broom attachment in place.

SQUEEGEE BROOM FOR DILUTED EMULSION

In the use of diluted emulsion on old surfaces, we have constructed a squeegee broom attachment which has improved the effectiveness of this operation. The broom is actually a double row of regular hand brooms, and it is dragged behind the spray bar. It causes a small wave of the diluted emulsion to flow ahead of the broom and fill the cracks. There is less runoff, and the squeegee action of the broom improves the results.

Broom attachment in travel position.

The shield is made of tin—pliers attached hold it against the delineator. Slots allow painting of black stripes, and the distance from bottom to top of stripe is set by shield.



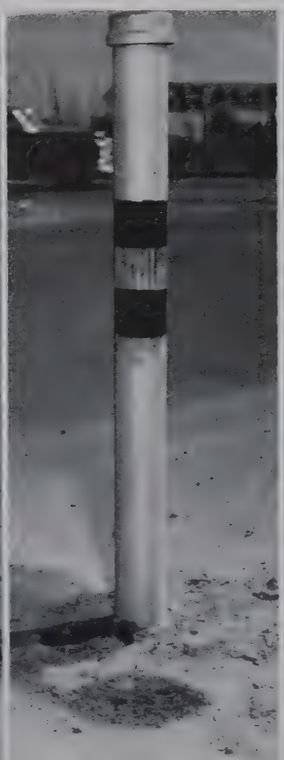
The shield is clamped over the black stripe and the aluminum paint applied. The shield is then removed and the reflective band placed.

PAINTING DELINEATORS IN SINGLE OPERATION

There are numerous delineators on raised medians in Midland. These have been installed as a field trial for this type of delineator. Shields have been made to allow complete painting of these in one operation.

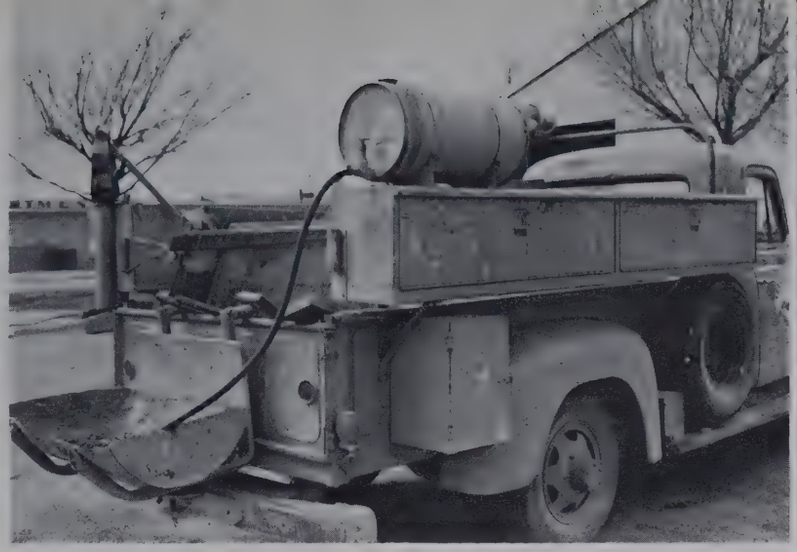
Step 1.

Step 2.



Step 3.

Step 4.



A 20-gallon water tank has been mounted atop the side compartments of the sign truck.

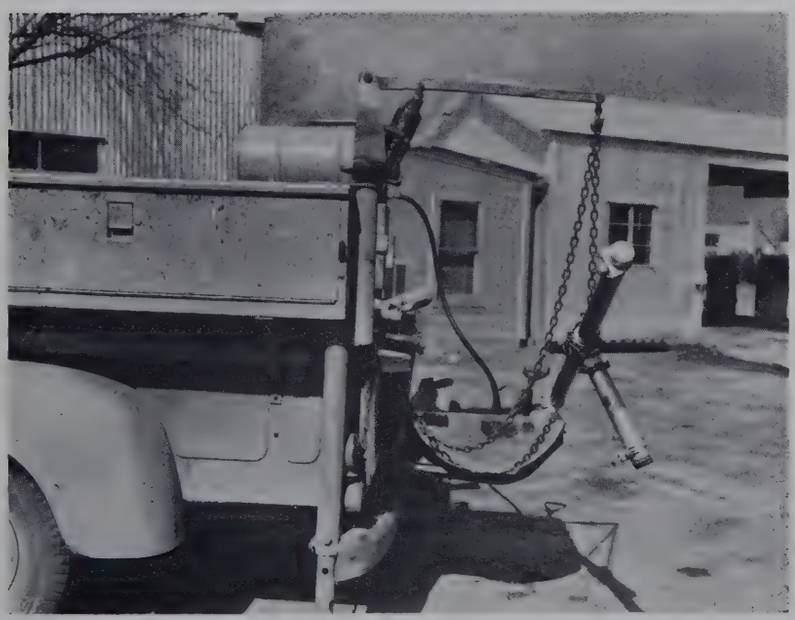
A half section of a 55-gallon drum is attached to the rear of the truck.

ACCESSORIES FOR SIGN PICKUP

To facilitate mixing the small amounts of concrete required for the installation of some signposts, a 20-gallon water tank and a half section of a 55-gallon drum have been added to the sign truck.

A small hoist has also been constructed, principally of scrap materials, to aid in pulling signposts and lifting the heavier assemblies. A five-ton hydraulic jack is used—the lever arm is a salvaged part of a 36-inch pipe wrench.

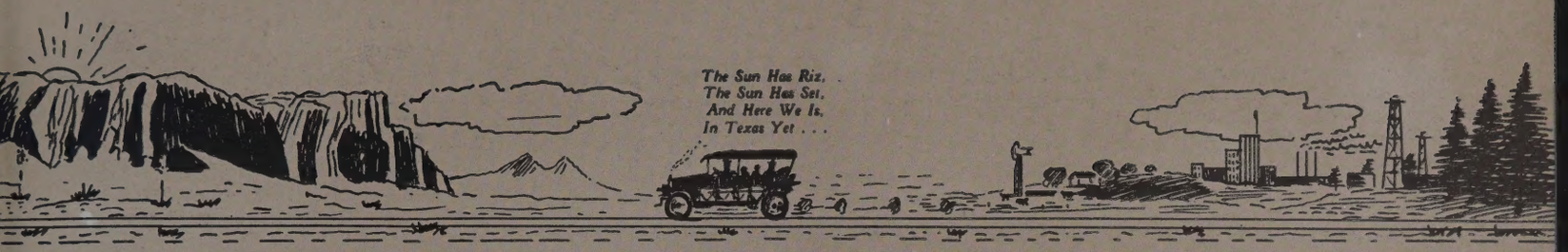
The small hoist is made mainly of scrap. A five-ton hydraulic jack operates the hoist, here lifting a signpost part.



ATTACHMENT FOR HANDLING TRAFFIC CONES

In major patching operations, the distribution and pickup of traffic cones may cover a considerable distance and require quite a bit of time. The attachment pictured was constructed to expedite the handling of these cones.

Seat attachment facilitates retrieving and placing of cones.



OVER THE HIGHWAYS

Comments . . . from the Traveling Public

• The roadside parks were very nice, especially with the pit and wood supplied. The covered parks were the very nicest.

Palo Alto, California

• The country is beautiful, the highways are excellent, the people are nice and friendly. We had a very good time in your country.

R. Massmann
Essen, Germany

• Approaches to freeways were not adequately marked. If you want to get lost, get on a loop.

Crowley, Louisiana

The following Interoffice Memorandum was sent from the Denison Tourist Bureau to all other bureaus:

• "This office had the privilege to assist a tourist from Illinois today, en route to Eagle Pass. She had many comments to make about the operation of the Texas Highway Department Tourist Bureaus, which we felt should be passed on to other employees of D-16.

"The tourist began with, 'Did you know the Texas Highway Department's travel information is famous all over the world?' She went on to say, 'I was with a conducted tour of the Far East recently and was in a china shop in Japan, when a native customer asked if I was from the United States. I explained where I was from and he wanted to know if I had ever visited Texas. When I told him I had, many times, he wanted to talk Texas right away. He had just returned from a tour of the United States and said he considered the Texas border information stations the best source of information he had used, also Texas printed one of the most informative and beautiful maps.'

"The tourist concluded with the statement that she never entered Texas without stopping at a Tourist Bureau to obtain assistance with her route and to check the latest highway conditions."

• I'd like to have some picture books or soovernears for my collection from states your my second state I've wrote to.

I've wrote to Phoenix, A. and they sent me pictures and a book I was happy.

Fifth Grader
Robbins, Illinois

p.s. try to sin something.

◆ [*Sic, sic, sic.*]

• Permit me to compliment you [District 4 Engineer] and the Highway Department . . . upon the most competent and courteous treatment on the highway I have experienced in all my many years of motoring.

Monday, April 17, Mrs. Hill and I were nine or ten miles east of Amarillo on the highway that angles northeasterly toward Enid, Oklahoma. Our car suddenly stopped.

We had hardly completed rolling to a safe margin on the wide shoulders of the highway, when a Texas Highway employee paused and inquired as to the difficulty and if he could be of service.

He quickly established that the ignition system was functioning properly. With even greater speed he identified the pump as the source of the trouble, even though it was a brand new pump and had been put on only the night before . . . in a matter of a few minutes he had disassembled the pump after removing it, established the fact that the tip end of the rocker arm attached to the diaphragm had broken, wrapped it in a rag, and told me all I needed was a new pump. Though he had other duties to perform he lingered long enough to radio to your office in Amarillo and relay word to the garage that had put on the defective pump the night before, and then went on his way.

I have heard others compliment the Texas Highway Department on its roads and the courtesy of its employees . . . this happens to be the first time I have had occasion to be assisted by a member of the department.

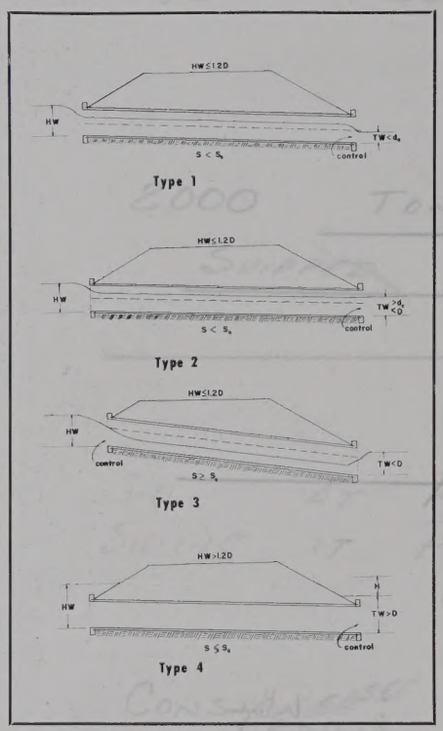
Jim Dan Hill
President
Wisconsin State College
Superior, Wisconsin

◆ *The employee is William L. Savelle, Skilled Laborer, Amarillo.*

To and From Our Readers

Wrong

Wrong, but wiser are we. Here is the way Figure 7, page 9, should have looked in the April story on *Revised Hydraulics Manual.* Author Shelton R. Rossbergs' drawings were reversed within the figure.



Carl Wiley's merit award entry suggesting that the State of Texas purchase mud flaps in a bright yellow color won him a $35 second prize in the Merit Award Contest ending February 28.

Wiley, Senior Maintenance Foreman at Roby, stated, "The mud flaps used at present are black in color and have a poor visual effect. Although they are meant more for stopping mud and gravel than looks, my suggestion is to get a dual purpose from the flaps. First, mud guards. Second, visual appearance from the rear view. . . . When a tail gate is removed or lowered in a flat position there is very little rear-end visual appearance. Since yellow can be seen further than any other color, I believe it will help as regards the safety of the traveling public, as well as the operator of the trucks.

"If purchasing yellow mud flaps is not practical, I have experimented with Y-P 6 yellow equipment enamel painted on them. We have two sets that have been in use eight months and still look new."

About Our Pictures . . .

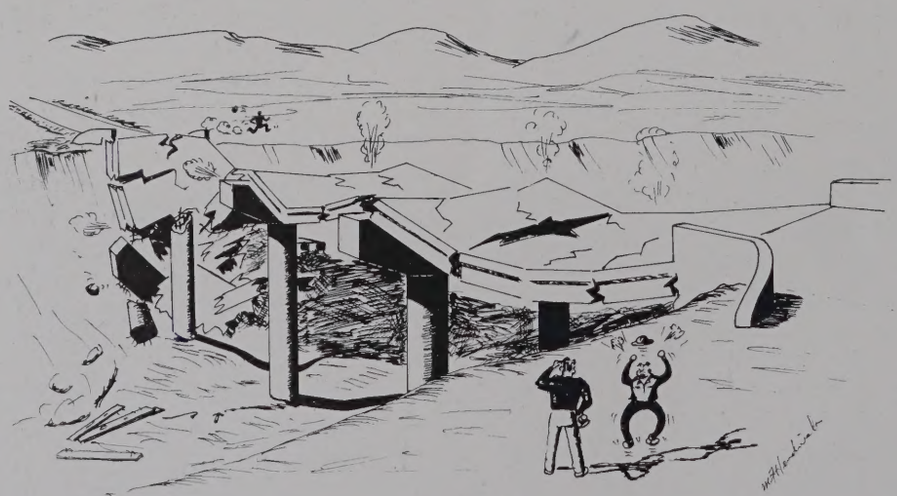
West Texas at its rugged best is pictured on this month's cover. This stretch of hills and cactus lies along State Highway 118 in the Davis Mountains between McDonald Observatory and the Junction with State Highway 166.

A motorist along Farm Road 2222 in the Highland Lakes area above Lake Austin will pause at this turnout to capture the view.

Welcome to Texas! This brand new Tourist Bureau on Interstate 10 near the New Mexico state line adapts to the landscape surrounding it as though nature had placed it there.

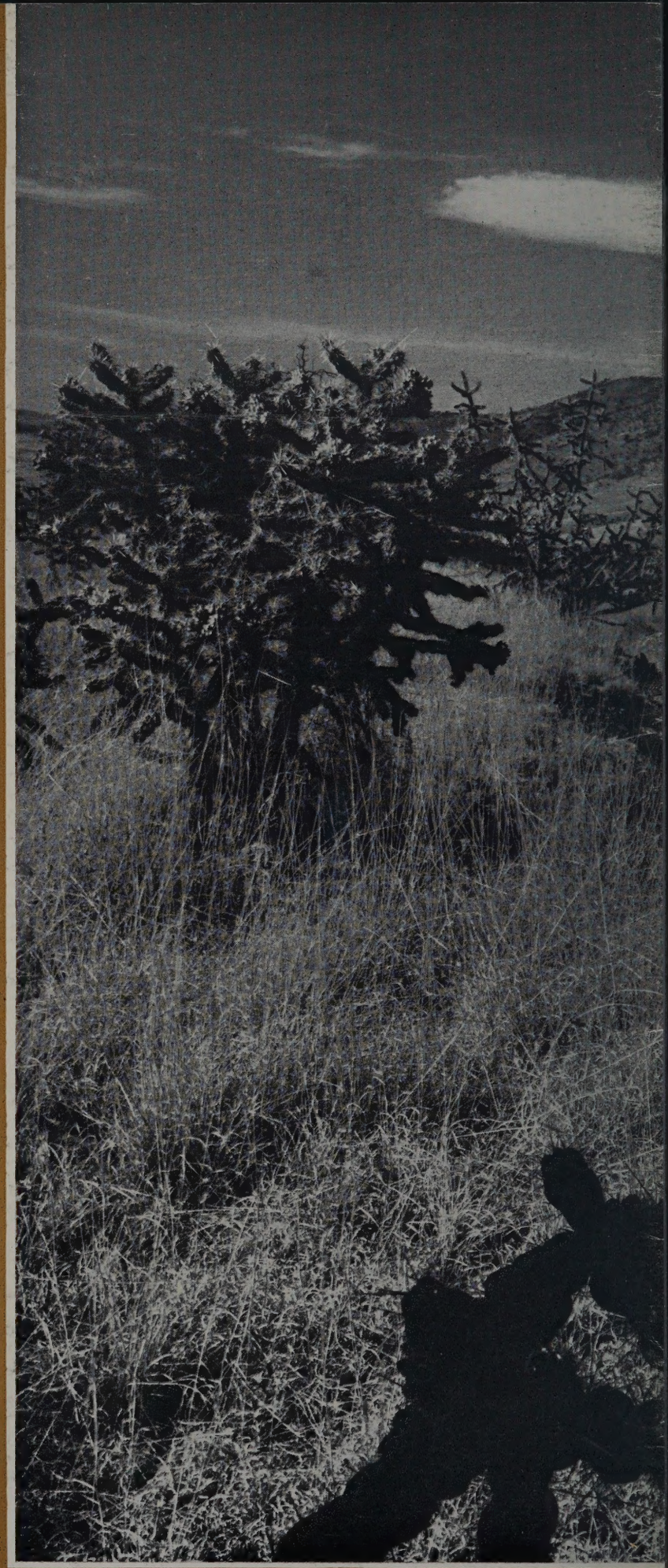
TEXAS HIGHWAY COMMISSION

HERBERT C. PETRY JR.	Chairman
CHARLES F. HAWN	Member
HAL WOODWARD	Member
D. C. GREER	State Highway Engineer



"I told you!! Don't take down the scaffolds till the railing is installed!"

Texas Highways

TEXAS HIGHWAYS, official journal of the Texas Highway Department, is published in the interest of highway development in Texas and for departmental education in the improvement of construction, maintenance, and operation.

TEXAS HIGHWAYS is available to the general public on a subscription basis at $3.50 annually, or it can be purchased for 35 cents a copy. Subscriptions, inquiries, material, or manuscripts should be directed to the Editorial Office, Travel and Information Division, Texas Highway Department, Austin 14, Texas.